## BS in Pharmaceutical Sciences

### Degree Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>Summary of Requirements</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pre-Pharmaceutical Sciences Requirements</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Major Requirements (Core and Selective)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Electives to Reach Minimum Hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total Hours</strong></td>
</tr>
</tbody>
</table>

### Pre-Pharmaceutical Sciences Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 160</td>
<td>Academic Writing I: Writing in Academic and Public Contexts</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following writing courses:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>ENGL 161</td>
<td>Academic Writing II: Writing for Inquiry and Research</td>
<td></td>
</tr>
<tr>
<td>HUM 101</td>
<td>Humanities Core: Understanding the Individual and Society</td>
<td></td>
</tr>
<tr>
<td>HUM 102</td>
<td>Humanities Core: Understanding the Past</td>
<td></td>
</tr>
<tr>
<td>HUM 120</td>
<td>Engaged Humanities: Understanding the Individual and Society</td>
<td></td>
</tr>
<tr>
<td>Select one of the following general chemistry sequences:</td>
<td></td>
<td><strong>10</strong></td>
</tr>
<tr>
<td>CHEM 122 &amp; CHEM 123</td>
<td>Matter and Energy and Foundations of Chemical Inquiry I</td>
<td></td>
</tr>
<tr>
<td>CHEM 124 &amp; CHEM 125</td>
<td>Chemical Dynamics and Foundations of Chemical Inquiry II</td>
<td></td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 116 &amp; CHEM 118</td>
<td>Honors and Majors General and Analytical Chemistry I and Honors and Majors General and Analytical Chemistry II</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>COMM 100</td>
<td>Fundamentals of Human Communication a</td>
<td></td>
</tr>
<tr>
<td>COMM 102</td>
<td>Introduction to Interpersonal Communication a</td>
<td></td>
</tr>
<tr>
<td>BIOS 110</td>
<td>Biology of Cells and Organisms c</td>
<td><strong>4</strong></td>
</tr>
<tr>
<td>BIOS 120</td>
<td>Biology of Populations and Communities c</td>
<td><strong>4</strong></td>
</tr>
<tr>
<td>CHEM 232</td>
<td>Structure and Function</td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>CHEM 233</td>
<td>Synthesis Techniques Laboratory</td>
<td><strong>2</strong></td>
</tr>
<tr>
<td>CHEM 234</td>
<td>Chemical Synthesis</td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td><strong>3-4</strong></td>
</tr>
<tr>
<td>PHYS 118</td>
<td>Physics in Modern Medicine c</td>
<td></td>
</tr>
<tr>
<td>PHYS 131</td>
<td>Introductory Physics for Life Sciences I c</td>
<td></td>
</tr>
<tr>
<td>PHYS 141</td>
<td>General Physics I (Mechanics) c</td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following: 4-5
- MATH 165 | Calculus for Business c |
- MATH 170 | Calculus for the Life Sciences c |
- MATH 180 | Calculus I c |

Select one of the following: 4
- STAT 101 | Introduction to Statistics |
- STAT 130 | Introduction to Statistics for the Life Sciences |

PHAR 200 and PHAR 201 should be completed by UIC students before admission to the program.

Four General Education courses d 12

Total Hours 58-60

a. This course is approved for the Understanding the Individual and Society General Education category.
b. Each of the following pairs will be considered one course in meeting the Analyzing the Natural World General Education category: CHEM 122/123, CHEM 124/125.
c. This course is approved for the Analyzing the Natural World General Education category.
d. All students need to complete UIC General Education requirements (i.e., students must earn a minimum of 24 hours of General Education credit with at least one course in each of six categories: Analyzing the Natural World, Understanding the Individual and Society, Understanding the Creative Arts, Understanding the Past, Understanding US Society, and Exploring World Cultures). The General Education section of the catalog lists courses that fulfill each category. UIC students may need to complete some General Education courses after admission to program.

### Pharmaceutical Sciences Major Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>Required Core Courses</strong></td>
</tr>
<tr>
<td>BIOS 350</td>
<td>General Microbiology</td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>BIOS 351</td>
<td>Microbiology Laboratory</td>
<td><strong>2</strong></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>BIOS/CHEM 352</td>
<td>Introductory Biochemistry</td>
<td></td>
</tr>
<tr>
<td>BIOS/CHEM 452</td>
<td>Biochemistry I</td>
<td></td>
</tr>
<tr>
<td>Select one of the following anatomy and physiology sequences:</td>
<td></td>
<td><strong>8-10</strong></td>
</tr>
<tr>
<td>KN 251</td>
<td>Human Physiological Anatomy I</td>
<td></td>
</tr>
<tr>
<td>&amp; KN 252</td>
<td>Human Physiological Anatomy II</td>
<td></td>
</tr>
<tr>
<td>KN 253</td>
<td>Human Anatomy and Physiology I</td>
<td></td>
</tr>
<tr>
<td>&amp; KN 254</td>
<td>Human Anatomy and Physiology II</td>
<td></td>
</tr>
<tr>
<td>Select one of the following (3 hours total):</td>
<td></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>PSCI 300</td>
<td>Undergraduate Research Experience in Pharmaceutical Sciences</td>
<td></td>
</tr>
<tr>
<td>PSOP 300</td>
<td>Undergraduate Research Experience in Pharmacy Systems, Outcomes and Policy</td>
<td></td>
</tr>
<tr>
<td>PMPR 300</td>
<td>Undergraduate Research Experience in Pharmacy Practice</td>
<td></td>
</tr>
<tr>
<td>PHAR 200</td>
<td>Introduction to Pharmaceutical Sciences b</td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>PHAR 201</td>
<td>Pharmaceutical Care in the US b</td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>
Sample Plan of Study

Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOS 220</td>
<td>Genetics</td>
<td>3</td>
</tr>
<tr>
<td>BIOS 416</td>
<td>Natural Products</td>
<td>3</td>
</tr>
<tr>
<td>BIOS 450</td>
<td>Advanced Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>BIOS 458</td>
<td>Biotechnology and Drug Discovery</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Hours 50-52

a Students must earn 3 hours in a single course, but may earn the credit over multiple semesters.

b Non-UIC students will complete PHAR 200 and PHAR 201 after admission to the BS in Pharmaceutical Sciences. UIC students who plan to apply to the BS should complete PHAR 200 and PHAR 201 before admission to the program.

Electives

Select elective courses to reach minimum total hours. 8-12

Total Hours 8-12

Sample Plan of Study

First Year

Fall Semester

ENGL 160  Academic Writing I: Writing in Academic and Public Contexts  3

One of the following:  5

- CHEM 122  Matter and Energy
- & CHEM 123  and Foundations of Chemical Inquiry I  a
- CHEM 116  Honors and Majors General and Analytical Chemistry I
- COMM 100  Fundamentals of Human Communication  a
- Exploring World Cultures General Education course  a

Third Year

Fall Semester

PHAR 200  Introduction to Pharmaceutical Sciences  b  3
CHEM 232  Structure and Function  3
BIOS 120  Biology of Populations and Communities  a  4
MATH 170  Calculus for the Life Sciences  a  4

Spring Semester

ENGL 161  Academic Writing II: Writing for Inquiry and Research  a  3
or HUM 101  or Humanities Core: Understanding the Individual and Society
or HUM 102  or Humanities Core: Understanding the Past and Engaged Humanities: Understanding the Individual and Society
or HUM 120  

One of the following:  5

- CHEM 124  Chemical Dynamics
- & CHEM 125  and Foundations of Chemical Inquiry II  a
- CHEM 118  Honors and Majors General and Analytical Chemistry II
- BIOS 110  Biology of Cells and Organisms  a

Understanding the Creative Arts General Education course  a  3

Hours 15

Fourth Year

Fall Semester

PHAR 410  Integrated Physiology  3
PHAR 422  Fundamentals of Drug Action  4
PHAR 431  Pharmaceutics I - Pharmaceutics Principles, Drug Delivery Systems, and Calculations  3
PHAR 435  Pharmacokinetics  3

One of the following:  5

- CHEM 124  Chemical Dynamics
- & CHEM 125  and Foundations of Chemical Inquiry II  a
- CHEM 118  Honors and Majors General and Analytical Chemistry II
- BIOS 110  Biology of Cells and Organisms  a

Understanding the Past General Education course  3

Hours 16

Spring Semester

PHAR 423  Fundamentals of Drug Action II  4
PHAR 432  Pharmaceutics II – Pharmaceutical Dosage Forms and Calculations  2
PHAR 438  Introduction to Drug Information  1
PHAR 461  Pharmacy and the U.S. Healthcare System  2

Elective  3

Understanding U.S. Society General Education course  a  3

Hours 16

Biological Sciences

First Year

Fall Semester

ENGL 160  Academic Writing I: Writing in Academic and Public Contexts  a  3

One of the following:  5

- CHEM 122  Matter and Energy
- & CHEM 123  and Foundations of Chemical Inquiry I  a
- CHEM 116  Honors and Majors General and Analytical Chemistry I
- COMM 100  Fundamentals of Human Communication  a
- Exploring World Cultures General Education course  a

Spring Semester

ENGL 161  Academic Writing II: Writing for Inquiry and Research  a  3
or HUM 101  or Humanities Core: Understanding the Individual and Society
or HUM 102  or Humanities Core: Understanding the Past and Engaged Humanities: Understanding the Individual and Society
or HUM 120  

One of the following:  5

- CHEM 124  Chemical Dynamics
- & CHEM 125  and Foundations of Chemical Inquiry II  a
- CHEM 118  Honors and Majors General and Analytical Chemistry II
- BIOS 110  Biology of Cells and Organisms  a

Understanding the Creative Arts General Education course  a  3

Hours 15

Second Year

Fall Semester

PHAR 200  Introduction to Pharmaceutical Sciences  b  3
CHEM 232  Structure and Function  3
BIOS 120  Biology of Populations and Communities  a  4
MATH 170  Calculus for the Life Sciences  a  4

Spring Semester

CHEM 233  Synthesis Techniques Laboratory and Chemical Synthesis  5
& CHEM 234  and Statistical Methods  3
STAT 130  Introduction to Statistics for the Life Sciences  4
PHAR 201  Pharmaceutical Care in the U.S.  b  3
PHYS 131  Introductory Physics for Life Sciences I  a  4

Understanding the Past General Education course  3

Hours 16

Third Year

Fall Semester

BIOS 350  General Microbiology
& BIOS 351  and Microbiology Laboratory
BIOS 352  Introductory Biochemistry  3
KN 253  Human Anatomy and Physiology I  4
PSCI 300 or PSOP 300 or PMPR 300  Undergraduate Research Experience in Pharmaceutical Sciences or Undergraduate Research Experience in Pharmacy Systems, Outcomes and Policy or Undergraduate Research Experience in Pharmacy Practice  1

Spring Semester

KN 254  Human Anatomy and Physiology II  4
BIOS 220  Genetics  3
or BIOS 416  or Natural Products
or BIOS 450  or Advanced Microbiology
or BIOS 458  or Biotechnology and Drug Discovery
PSCI 300 or PSOP 300 or PMPR 300  Undergraduate Research Experience in Pharmaceutical Sciences or Undergraduate Research Experience in Pharmacy Systems, Outcomes and Policy or Undergraduate Research Experience in Pharmacy Practice  2

Understanding U.S. Society General Education course  a  3

Elective  4

Hours 16

Fourth Year

Fall Semester

PHAR 410  Integrated Physiology  3
PHAR 422  Fundamentals of Drug Action  4
PHAR 431  Pharmaceutics I - Pharmaceutics Principles, Drug Delivery Systems, and Calculations  3
PHAR 435  Pharmacokinetics  3

One of the following:  5

- CHEM 124  Chemical Dynamics
- & CHEM 125  and Foundations of Chemical Inquiry II  a
- CHEM 118  Honors and Majors General and Analytical Chemistry II
- BIOS 110  Biology of Cells and Organisms  a

Understanding the Creative Arts General Education course  a  3

Hours 16
a Fulfills General Education Requirements.
b Transfer students may take PHAR 200 and PHAR 201 during their third year, if necessary.

**BSPS/PharmD Pathway**

BSPS students may apply to the PharmD Program during their third undergraduate year. In the BSPS/PharmD Pathway, students can complete the BSPS and PharmD Program in seven years, since there are 22 hours of course work that are shared between the two degrees. Students in the BSPS/PharmD Pathway receive their BSPS degree upon completion of 120 hours at the end of their first year of the PharmD Program.